Course Unit Descriptor

Study Programme: Geodesy

Course Unit Title: Geoinformatics 2

Course Unit Code:

Name of Lecturer(s): Associate Professor Vukan Ogrizović

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Winter

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 5

Prerequisites: None

Course Aims:

Introducing advanced geospatial data analysis to students

Learning Outcomes:

After the course completion, the students will be skilled in: import, rectification, and processing of satellite images, digitising raster data, creation of digital terrain models, as well as, advanced spatial data analysis

Syllabus:

Theory

1. Geospatial data collection. Data collection methods. Data sources.
2. Basic digital image characteristics.
3. Digital image processing. Digitizing images.
4. Satellite images as geospatial data source. Channels and colours.
5. Radiometric and geometric pre-processing of satellite images.
6. Thematic reclassification of satellite data.
7. Test I
8. Spatial data interpolation methods.
9. Digital terrain models. Classification.
10. Areas and terrain modelling. Network of triangles. Square or rectangle grid.
11. Interpolation techniques. Visualization methods.
12. Accuracy estimation of geospatial data.
13. Advanced analysis of raster and vector data
14. Advanced analysis of raster and vector data
15. Test II

Practice

Satellite image import. Radiometric and geometric corrections. Georeferencing. Digitizing. Digital terrain model creation. Using advanced functions for raster and vector data analysis.

Required Reading:

1. Burrough P.A., McDonnell, R.A.: Принципи географских информационих система, Грађевински факултет Универзитета у Београду, 2006.
2. Neteler, M. and Mitasova, H.: Open source GIS: A GRASS GIS approach, Kluwer Academic Publishers,

Boston/Dortrecht/London, 2002.
3. Williams, H. i Lane D.: Web aplikacije i baze podataka: PHP i SQL, Mikro knjiga, Beograd, 2003.

Weekly Contact Hours: 60	**Lectures:** 30	**Practical work: 30**

Teaching Methods:

Lectures and students group work

Knowledge Assessment (maximum of 100 points): 100

Pre-exam obligations	points	**Final exam**	points
Active class participation		written exam	
Test I and Test II	50	oral exam	50
Preliminary exam(s)		…….	
Seminar(s)			

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.